

An Empirical Study between CEO Cash Compensation and CEO Power in TSX/S&P Index Companies

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Abstract—This study investigated the relationship between the Chief Executive Officer (CEO) cash compensation and CEO power in TSX/S&P index companies from 2005 to 2010. The totaled of one hundred and twenty companies were selected through random sampling method from TSX/S&P index. The research question for this study was: is there a relationship between CEO cash compensation and CEO power?. To answer this question, eight statistical models were created. Overall, most of the statistical test results were found to have a relationship between CEO cash compensation and CEO power as such null hypotheses were rejected. The correlation among CEO salary, bonus, CEO age, CEO shares outstanding, CEO shares value, CEO tenure, CEO turnover, 5 percent management ownership; and 5 percent individuals/institutional ownership, were found to be ranged from weak negative to weak positive ratios. In addition, firm group-sized had a mixed effect on the relationship between them.

Index Terms: CEO Cash Compensation, Accounting Performance, Firm Size, Corporate Governance, CEO Power, CEO Salary, and CEO Bonus.

1 INTRODUCTION

Over the past decade in Canada, the Canadian public had raised concerns over bonuses declared to CEOs. The failure to understand the determinants of CEO cash compensation from the public had led to blame CEOs of rent grabbing (through monopolization of compensation system). Thus, this ever growing concern has brought to the foreground conclusion the need to further study in depth the primary relationship and the resulting dynamics between CEO cash compensation and CEO power. As such, this research study had selected to study CEO cash compensation and CEO power in depth using seven independent variables: CEO age, CEO shares outstanding, CEO shares value, CEO tenure, CEO turnover, 5 percent management ownership, and 5 percent individuals/ institutional ownership. In addition, this research study will be conducted on the group firm size (small, medium, and large), to understand in finer terms how these groups effect the correlations between CEO cash compensation and CEO power. The TSX/S&P index was selected to select sample population.

The relationship between CEO compensation and CEO power was not attested extensively in the past, especially in Canada. In fact, only few credible researched papers were available for study. That is, CEO power only has been the subject of the recent focus among researchers, primarily due to the effect of researchers had failed to find the strong relationship between CEO compensation, firm size, and firm performance. The sub variables used in previous studies as a proxy for CEO power was CEO age, CEO tenure, and CEO turnover were found to have weak relationships with CEO compensation. In addition, third party data collection, particular segment sample population focus such as

industry, and the use of different statistical methods, all had led to divergent in the results. Therefore, CEO power needs to be studied with CEO cash compensation on an extensive basis, perhaps using maximum possible sub-variables, focus on recent period, and selecting a larger sample size, to understand in-depth the true relationship between them.

2 LITERATURE REVIEW

2.1 CEO CASH COMPENSATION AND CEO POWER AND CEO STOCK OWNERSHIP

The CEO's voting power includes CEO's shares ownership in the company, the CEO's immediate beneficially owned, and percentage of shares over which CEO's have a sale or shared power to direct the voting. It was believed that CEO in large firms tends to own less stock and have less compensation-based incentives than CEOs in small firms. This is supported by Jensen and Murphy (1989) who stated that estimated pay-performance sensitivity for CEOs in the top half of the sample (ranked by market value) firms was \$1.85 per \$1,000, compared to \$8.05 per \$1,000 for CEOs in the bottom half sample firms. In addition, they (1990) argued that as a percentage of the total corporate value, CEO share ownership had never been very high. The median CEO of one of the nation's 250 largest public companies own shares worth just over \$2.4 million, again, less than 0.07% of the company's market value. Also, 9 out of 10 CEOs who own less than 1% of their company's stock, while fewer than 1 in 20 owns more than 5% of the company's outstanding shares. Jensen and Murphy (1990) found in their study that the most powerful link between shareholder wealth

and executive wealth was direct ownership of shares by CEO. They found, on average, the CEOs receive about 50% of their base pay in the form of bonuses. They argued that most experts assessed CEO stock ownership in terms of dollar value of the CEO's holdings or value of his shares as a percentage of his annual cash compensation. However, they also argued that neither of these measures were relevant in the CEO incentive determination. They believed that percentage of the company's outstanding shares of CEO ownership influences the CEO's pay. However, they found no correlation between CEO stock ownership and pay-performance sensitivity in CEO cash compensation. That is, the board of directors ignore CEO stock ownership when structuring incentive plans. This was supported Cyert, Kang, and Kumar (2002) who also argued that CEO pay is negatively related to the share ownership of the board's compensation committee; and doubling compensation committee ownership reduces non-salary compensation by 4 to 5 percent. In addition, many other studies also failed to find any relationship between the firm value and the executives' equity stakes (e.g., Agrawal & Knoeber 1996, Himmelberg et al. 1999, Demsetz & Villalonga 2001), primarily due to the equity holdings were the decision of the managers and the boards, none of these correlations can be interpreted as causal. Murphy and Jensen (1990) who found that there was a small and insignificant positive coefficient of ownership interaction variable exist, which implied that the relation between compensation and performance was independent of an executive's stock holdings. However, these findings were challenged by Mehran (1995) who found a positive relationship between percentage of total compensation in cash (salary and bonus) and percentage of shares held by managers. Ungson and Steers (1984) believed that in firms where the CEO had large shareholdings, long tenure, control of top management team, or other means, CEO can largely shape his or her pay. Similarly, Finkelstein and Hambrick (1988) believed that the relative power of a CEO may affect the height of the hurdles that are set to qualify for the contingent pay. In addition, they also believed that executives who own significant portions of their firms are likely to control not only operating decisions but the board decisions as well. As such, executives would be in a position to essentially set their own compensation. In addition, they believed that stronger family's position in the firm, the stronger will be the executive's position, despite the family shareholders may not be as active as the independent directors might be. They also found that CEO compensation and shareholdings are related in an inverted-U manner, with compensation highest in situations of moderate CEO ownership. That is, the point of inflection happened when CEO shareholdings reached about 9 percent. Up to that point, increased in CEO ownership seemed to bring increased salaries, due to increase in CEO power and CEO tenure for the first 18 years, and beyond that ownership level, salaries dropped, due to tax preference of incurring capital gains over current income. Jensen and Murphy (1989) found that executive inside stock ownership can provide incentives, but these holdings were not generally controlled by a corporate board, and the majority of top executives has small personal equity ownership. Bertrand and Mullainathan (2000) found that CEOs in the firms that lacks 5

percent (or larger) external shareholder tend to receive more luck based pay, pay associated with profit increases that are entirely generated by external factors rather than by managers' efforts. They also found that in firms lacking large external shareholders, cash compensation of CEOs was reduced less when their option-based compensation was increased.

2.2 CEO CASH COMPENSATION AND CEO POWER and CEO TENURE

Murphy (1986) argued that previous research had shown CEO tenure had an influence CEO performance. The increased CEO tenure may promote a principal's trust of an agent and the assumption that actions will be taken in the principal's interest. Sigler (2011) argued that CEO tenure appears to be one of the significant variables in determining the level of CEO compensation. His examination was based on 280 firms listed on the New York Stock Exchange for a period from 2006 to 2009. Finkelstein and Hambrick (1989) believed that CEO tenure was thought to have a positive link with compensation, with pay steadily increased as CEO solidifies power over-time. However, in their findings such a pattern was not observed for any of the measures of CEO compensation. Since a monotonic relationship was not found between CEO tenure and CEO pay, the existence of a curvilinear association was investigated. In addition, the average tenure of CEOs was significantly lower in externally-controlled firms (2.96 years) than management-controlled firms (5.92 years). Thus, they believed that the boards of externally-controlled firms may not need to pay from profitability because CEO tenure was dependent on the owner's satisfaction (CEO performance). For the total pay, this finding was relatively strong with the inflation adjusted pay starting to decline at about 18 years of tenure. According to them there were two possible explanations for this curvilinear pattern. The first was that the power accrues for a while and then diminishes due to the CEO's reduced mobility in the managerial labor market, or due to his evolution into a figurehead with one or two younger high priced executives who carry the actual weight of the CEO's job. The second possibility was that executive reach a point where they prefer other forms of compensation over cash. This could occur because of the changes in family and financial circumstances, or due to a switch to reliance on the stock appreciation and dividends, as the CEO's shareholdings increase over time. This supposition was supported when two sub samples were examined ($p < 0.01$) greater shareholdings than a short tenure low pay group. Hence, it was not that long tenured CEOs were paid less, but rather that pay mix shifts from cash to stock earnings over-time, supporting the notion that personal circumstances influence pay. They also argued that long CEO's tenure, the board will consist of his or her own, often sympathetic appointees. In addition, management-controlled firms where CEOs were relatively powerful, CEO tenure was likely to be important to pay determinants. However, Pfeffer (1981) supported Finkelstein and Hambrick (1989) findings that the creation of a personal mystique which may induce unquestioned deference or loyalty, can be expected to occur when CEO power becomes institutionalized in the

organization. A second source of power that was expected to affect compensation was the executive's shareholdings in the firm.

2.3 CEO CASH COMPENSATION AND CEO POWER AND CEO AGE

Deckop (1988) argued that the CEO's age had little effect on CEO compensation. However, Finkelstein and Hambrick (1989) found an inverted U-shaped relationship between CEO age and CEO cash compensation. The cash compensation increased with an age up to a point at 59 years, beyond which real cash earnings decreased. They also believed that this pattern of the earnings over-time was in line with the CEO's need for cash, which tends to drop-off as he or she gets older, due to no major expenditures to incur such as house and child-rearing expenses.

3 RESEARCH METHODOLOGY

This research had adopted quantitative research method, as it is the method to be used for historical data collection and descriptive studies. The longitudinal study approach had been selected under quantitative research method to study corporate financial records from 2005 to 2010. The stratified sample method had been selected to obtain total sample population of one hundred and twenty companies from TSX/S&P index. The total population had been divided into three groups of firm size (small, medium, and large). Each group will have a sample size of forty to ensure statistical test results were comparable among these groups. For statistical tests, CEO cash compensation was assigned as dependent variable, firm size was assigned as both independent and control variables, and firm performance and CEO power were assigned as independent variables. The total of eight models were created. The survey method had been adopted as it is the most appropriate approach to collect historical data. The inferential statistics-based methodology, which is very instrumental in this quantitative research, had been used to obtain statistical results. The 95 percent confidence level will be assumed for all the research attestations.

4 DATA FINDINGS AND CONCLUSIONS

Table 1 (Regression Analysis - ANOVA)

	Table 1 (ANOVA)			
	Small	Medium	Large	Total Population
Salary vs. CEO Power	F _(7,230) =8.844 p=.000 R ² =0.212	F _(7,232) =5.822 p=.000 R ² =0.149	F _(7,225) =5.768 p=.000 R ² =0.152	F _(7,701) =15.099 p=.000 R ² =0.131
Bonus vs. CEO Power	F _(7,203) =5.962 p=.000 R ² =0.171	F _(7,219) =2.763 p=.009 R ² =0.024	F _(7,228) =2.720 p=.010 R ² =0.08	F _(7,638) =4.554 p=.000 R ² =0.048

The table 1 had shown that there were relationships between CEO salary, CEO bonus, and CEO power across all four population categories of small, medium, large, and total. The null hypotheses were rejected at $\alpha=.025$ under two-tailed test system. That is, there was a positive relationship between CEO salary, CEO bonus, and CEO power. The first three categories of firm size were used to assess its effect on the relationship between CEO cash compensation and CEO power. The fourth category was a total population test to compare its result with the results of the first three categories. Although the relationship between CEO cash compensation and CEO power was positive, regression (R^2) was found to be consistently low across all the four population categories, but the extent of their relationship was weak.

Table 2 – Correlations (CEO compensation vs. CEO Age)

	Small	Medium	Large	Total Population
	CEO Age	CEO Age	CEO Age	CEO Age
Salary	0.106	0.084	0.08	0.174
Bonus	0.173	-0.04	-0.05	0.179

The table 2 had shown that the overall correlation between CEO salary and CEO age was positively correlated among companies in TSX/S&P index. The correlation between CEO salary and CEO age had decreased from .106 to .084 and then had decreased to .08, as the size of the population group changed from small, to medium, and to large. The correlation between CEO bonus and CEO age had decreased from .173 to -.04 and then further had decreased to -.05, as the size of the population group changed from

small, to medium, and to large. Thus, these results had shown that the moderator variable, group firm size, had an overall negative impact on the correlation between CEO salary, CEO bonus, and CEO age. That is, the larger the firm size, the weaker were the correlations between CEO salary, CEO bonus, and CEO age.

Table 3 – Correlations (CEO Compensation vs. CEO Shares)

	Small	Medium	Large	Total Population
	CEO Shares	CEO Shares	CEO Shares	CEO Shares
Salary	-0.099	-0.034	0.171	0.139
Bonus	-0.14	0.155	0.169	0.068

The table 3 had shown that the overall correlation between CEO salary and CEO shares was mixed correlated among companies in TSX/S&P index. The correlation between CEO salary and CEO shares had increased from -.099 to .034 and then had increased further to .171, as the size of the population group changed from small, to medium, and to large. The correlation between CEO bonus and CEO shares had increased from -.14 to .155 and then had increased further to .169, as the size of the population group changed from small, to medium, and to large. Thus, these findings indicated that there was a weak mixed relationship between CEO salary, CEO bonus, and CEO shares. In addition, the moderator variable, firm size, had played an important role towards influencing the relationship between CEO salary, CEO bonus, and CEO shares. That is, the larger the firm size, CEO shares ownership had an increased positive influence towards CEO salary and CEO bonus.

Table 4 – Correlations (CEO Compensation vs. CEO Share Value)

	Small	Medium	Large	Total Population
	CEO Share Value	CEO Share Value	CEO Share Value	CEO Share Value
Salary	0.218	0.031	0.347	0.299
Bonus	0.215	0.106	0.226	0.112

The table 4 had shown that the correlation between CEO salary and CEO share value had decreased from .218 to .031 and then had increased to .347, as the size of the population group changed

from small, to medium, and to large. The correlation between CEO bonus and CEO share value had decreased from .215 to .106 and then had increased to .226, as the size of the population group changed from small, to medium, and too large. Thus, these findings indicated that there was a weak to moderate positive relationship between CEO salary, CEO bonus, and CEO share value. In addition, the moderator variable, firm size, had an overall positive impact on the correlation between CEO salary, CEO bonus, and CEO shares.

Table 5 – Correlations (CEO cash compensation vs. CEO Tenure)

	Small	Medium	Large	Total Population
	CEO Tenure	CEO Tenure	CEO Tenure	CEO Tenure
Salary	0.097	0.264	0.21	0.119
Bonus	0.053	0.138	-0.037	0.064

The above table 5 had shown that the correlation between CEO salary and CEO tenure had increased from .097 to .264 and then had decreased to .210, as the size of the population group changed from small, to medium, and to large. The correlation between CEO bonus and CEO shares had increased from .053 to .138 and then had decreased to -.037, as the size of the population group changed from small, to medium, and to large. Thus, these findings indicated that there was a weak negative to moderate positive correlation between CEO salary, CEO bonus, and CEO tenure. In addition, the moderator variable, firm size, had a mixed impact on the correlation between CEO salary, CEO bonus, and CEO tenure.

Table 6 – Correlations (CEO Cash Compensation vs. CEO Turnover)

	Small	Medium	Large	Total Population
	CEO Turnover	CEO Turnover	CEO Turnover	CEO Turnover
Salary	-0.063	-0.159	-0.105	-0.071
Bonus	0.123	-0.088	-0.027	-0.063

The above table 6 shown that overall correlations between CEO Salary, CEO Bonus, and CEO Turnover, were negatively correlated among the companies in TSX/S&P index. The correlation between CEO salary and CEO tenure had decreased from -.063 to -

.159 and then had increased to .105, as the size of the population group changed from small, to medium, and to large. The correlation between CEO bonus and CEO shares had decreased from .123 to -.088 and then had increased to -.027, as the size of the population group changed from small, to medium, and to large. Thus, these findings indicated that there was a weak negative to weak positive correlation between CEO salary, CEO bonus, and CEO turnover. In addition, the moderator variable, firm size, had a mixed impact on the correlation between CEO salary, CEO bonus, and CEO turnover.

Table 7 – Correlations (CEO Cash Compensation vs. 5% Mgmt. Ownership)

	Small	Medium	Large	Total Population
	5% Mgmt. Ownership	5% Mgmt. Ownership	5% Mgmt. Ownership	5% Mgmt. Ownership
Salary	-0.124	0.045	0.001	-0.019
Bonus	-0.106	0.154	0.101	0.029

The above table 7 had shown that overall correlations between CEO salary, CEO bonus, and 5 percent management ownership, were positive among TSX/S&P index companies. The correlation between CEO salary and 5 percent management ownership had increased from -.124 to .045 and then had decreased to .001, as the size of the population group changed from small, to medium, and to large. The correlation between CEO bonus and 5 percent management ownership had increased from .106 to .154 and then had decreased to .101, as the size of the population group changed from small, to medium, and to large. Thus, these findings indicated that there was a weak negative to the weak positive relationship between CEO salary, CEO bonus, and CEO turnover. In addition, the moderator variable, firm size, had a mixed impact on the correlation between CEO salary, CEO bonus, and CEO turnover.

Table 8 – Correlations (CEO Cash Compensation vs. 5% INDV./INST.)

	Small	Medium	Large	Total Population
	5% INDV./INST.	5% INDV./INST.	5% INDV./INST.	5% INDV./INST.
Salary	0.309	-0.062	-0.018	0.027
Bonus	0.07	-0.18	-0.08	-0.031

The above table 8 had shown that there were weak mixed correlations between CEO salary, CEO bonus, and 5 percent individuals/institutional ownership, in TSX/S&P index companies. The correlation between CEO salary and 5 percent individuals/institutional ownership had decreased from .309 to -.062 and then had increased to .018, as the size of the population group changed from small, to medium, and to large. The correlation between CEO bonus and 5 percent individuals/institutional ownership had increased from .07 to -.18 and then had increased to -.08, as the size of the population group changed from small, to medium, and to large. Thus, these findings indicated that there was a weak negative to weak positive correlation between CEO salary, CEO bonus, and 5 percent individuals/institutional ownership. In addition, the moderator variable, firm size, had a mixed impact on the correlation between CEO salary, CEO bonus, and 5 percent individuals/institutional ownership.

5 CONCLUSION

The purpose of studying the relationship between CEO cash compensation and CEO power was to understand the nature and extent of the relationship among them. The results illustrated that regression (R^2) was found to be consistently low across all four population categories. The overall correlation between CEO salary, CEO bonus, and CEO age was found to have weak mixed ratios. The overall correlation between CEO salary, CEO bonus, and CEO share was found to have weak mixed ratios. The overall correlation between CEO salary, CEO bonus, and CEO share values was found to have weak to moderate positive ratios. The overall correlation between CEO salary, CEO bonus, and CEO tenure was found to be ranged from weak positive to weak negative ratios. The overall correlation between CEO salary, CEO bonus, and CEO turnover was found to have weak mixed ratios. The overall correlation between CEO salary, CEO bonus, and 5 percent management ownership was weak mixed ratios. The overall correlation between CEO salary, CEO bonus, and 5 percent individuals/institutional ownership was found to be ranged from weak negative to moderate positive ratios.

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All nine models assumed to have a confidence level (α) of 5 percent.

7 APPENDIX

Operational Hypothesis Statement

- H0: There is no relationship between CEO cash compensation and CEO power in TSX/S&P index companies.
- H1: There is a relationship between CEO cash compensation and CEO power in TSX/S&P index companies.

To address this operational hypothesis statement, separate models were developed for each dependent variable:

Firm Size

For Salary: $Y1 = c + B1X1 + B2X2 + \epsilon$
 For Bonus: $Y2 = c + B1X1 + B2X2 + \epsilon$
 (Y1=Salary; Y2=Bonus; c=constant predictor; B1=influential factor for Total Sales; B2=influential factor for Total Number of Employees; and ϵ =error).
 (X1=Value of the Total Sales; X2=Value of the Total Number of Employees).

CEO Power

For Salary: $Y5 = c + B1X1 + B2X2 + B3X3 + B4X4 + B5X5 + B6X6 + B7X7 + \epsilon$
 For Bonus: $Y6 = c + B1X1 + B2X2 + B3X3 + B4X4 + B5X5 + B6X6 + B7X7 + \epsilon$
 (Y5=Salary; Y6=Bonus; c=constant predictor; B1=influential factor for CEO Age; B2=influential factor for CEO Shares Outstanding; B3=influential factor for CEO Shares Value; B4=influential factor for CEO Tenure; B5=influential factor for CEO Turnover; B6=influential factor for Management 5 percent Shares Ownership; B7= Individuals/Institutional 5 percent Ownership; and ϵ =error).
 Let X1=Value of CEO Age; X2=Value of CEO Shares Outstanding; X3=Value of CEO Shares Value; X4=Value of CEO Tenure; X5=Value of CEO Turnover; X6=Value of Management 5 percent Shares Ownership; and X7=Value of Individuals/Institutional 5 percent Ownership.